

AMENDMENTS TO THE CLAIMS

This Listing of Claims will replace all prior versions, listing, of claims in the specification.

LISTING OF CLAIMS:

Claim 1 (Currently Amended) A method for forming a molecularly imprinted membrane and using the membrane in discriminating a peptide, comprising the steps of:

(a) providing an organic compound, said organic compound being a derivative of cystine ~~which serves as an adsorbent, a cross-linker and a monomer;~~

(b) dissolving said derivative of cystine in a mixture of acetonitrile and DMF;

(c) adsorbing said dissolved derivative of cystine ~~organic compound~~ on a chip to form a single layer; and

(de) ~~associating~~ coupling monomers with double bonds and template molecules to said chip to form said a molecularly imprinted membrane thereon by polymerization.

~~(ed) detecting by a quartz crystal microbalance (QCM) or a surface plasma resonance (SPR) equipped with a flow injection system.~~

Claim 2 (Canceled).

Claim 3 (Currently Amended) The method of claim 1 ~~2~~, wherein said derivative of cystine ~~or homocysteine~~ comprises L-cystine, D-cystine, or racemic cystine, ~~L-~~

homocystine, D-homocystine or racemic homocystine.

Claim 4 (Currently Amended). The method of claim 1, wherein said derivative of cystine is (Acr-Cys-NHBn)<sub>2</sub>, (Acr-Cys-NHΦ)<sub>2</sub>, (Macr-Cys-NHBn)<sub>2</sub>, (Macr-Cys-NHΦ)<sub>2</sub>, (Acr-hCys-NHBn)<sub>2</sub>, (Acr-hCys-NHΦ)<sub>2</sub>, (Macr-hCys-NHBn)<sub>2</sub> or (Macr-hCys-NHΦ)<sub>2</sub>; wherein hCys is homocystine, Φ is phenyl, and Macr is methacryl. ~~(Acr-Cys-NHBn).sub.2, (Acr-Cys-NH.PHI.).sub.2, (Macr-Cys-NHBn).sub.2, (Macr-Cys-NH.PHI.).sub.2, (Acr-hCys-NHBn).sub.2, (Acr-hCys-NH.PHI.).sub.2, (Macr-hCys-NHBn).sub.2, (Macr-hCys-NH.PHI.).sub.2, (Acr-hCys-NHBn).sub.2, (Acr-hCys-NH.PHI.).sub.2, (Macr-hCys-NHBn).sub.2 or (Macr-hCys-NH.PHI.).sub.2~~; wherein hCys is homocystine, PHI. is phenyl, and Macr is methacryl.

Claim 5 (Currently Amended) The method of claim 1, wherein said monomers are (Macr-Cys-NHBn)<sub>2</sub>, (Macr-AA-NHBn)<sub>2</sub>, (Macr-Cys-NHΦ)<sub>2</sub>, (Macr-AA-NHΦ)<sub>2</sub>, (Acr-hCys-NHBn)<sub>2</sub>, (Acr-hCys-NHΦ)<sub>2</sub>, (Macr-hCys-NHBn)<sub>2</sub>, (Macr-hCys-NHΦ)<sub>2</sub>, methacrylamide, methacrylic acid, N-benzyl-methacrylamide, (Acr-Cys-NHBn)<sub>2</sub>, (Acr-AA-NHBn)<sub>2</sub>, (Acr-Cys-NHΦ)<sub>2</sub>, (Acr-AA-NHΦ)<sub>2</sub>, acrylamide, acrylic acid or N-benzyl-acrylamide; wherein AA is L-, D- or racemic amino acid, Φ is phenyl and Macr is methacryl. ~~(Macr-Cys-NHBn).sub.2, (Macr-AA-NHBn).sub.2, (Macr-Cys-NH.PHI.).sub.2, (Macr-AA-NH.PHI.).sub.2, (Acr-hCys-NHBn).sub.2, (Acr-hCys-NH.PHI.).sub.2, (Macr-hCys-NHBn).sub.2, (Macr-hCys-NH.PHI.).sub.2, methacrylamide, methacrylic acid, N-benzyl-methacrylamide, (Acr-Cys-NHBn).sub.2,~~

MR957-1411

Serial Number: 10/690,600

Response to Office Action dated 27 February 2007

~~(Acr-AA-NHBn).sub.2, (Acr-Cys-NH.PHI.).sub.2, (Acr-AA-NH.PHI.).sub.2,~~  
~~acrylamide, acrylic acid or N-benzyl acrylamide; wherein AA is L-, D- or racemic amino~~  
~~acid, .PHI. is phenyl and Macr is methacryl.~~

Claim 6 (original) The method of claim 1, wherein said template molecule is amino acid, nucleic acid, carbohydrate, lipid or peptide.

Claim 7 (original) The method of claim 6, wherein said peptide is oxytocin.

Claim 8 (original) The method of claim 6, wherein said peptide is vasopressin.

Claim 9 (Currently Amended) The method of claim 1, wherein said derivative of cystine is (Acr-Cys-NHBn)<sub>2</sub> and said (Acr-Cys-NHBn)<sub>2</sub> is dissolved ~~organic compound~~ is adsorbed on said chip by dissolving (Acr-Cys-NHBn).sub.2 in said a mixture of acetonitrile (10 ml) and DMF (0.1 ml), which is then deposited and adsorbed on said chip therein.

Claim 10 (original) The method of claim 1, wherein said monomers with double bonds are acrylic acid, acrylamide and N-benzylacrylamide which are added at a molar ratio 1:1:2.

Claim 11 (Currently Amended) The method of claim 1, wherein said polymerization is carried out by either irradiating with light at 350 nm for 6 hours or heating at 50-100° C to completion. ~~50.about.100.degree. C. to completion.~~

Claim 12 (Currently Amended) A method for forming a molecularly imprinted membrane for use in discriminating a peptide, using a combination technology of molecular imprinting and QCM, in which (Acr-Cys-NHBn)<sub>2</sub> ~~(Acr-Cys-NHBn).sub.2~~ is adsorbed on a chip to form a single layer; and then acrylamide, acrylic acid, N-benzyl-acrylamide and a template molecule are coupled ~~associated~~ to said chip to form said a molecularly imprinted membrane by radical polymerization.